

MSC Guidelines for Review of Inland/Ocean Tank Barge General Arrangements

Procedure Number: T1-16

Revision Date: 01/13/00

References

- a. 46 CFR Subchapter D
 - b. 46 CFR Subchapter O
 - c. 46 CFR Subchapter I
 - d. 33 CFR Part 157, Rules for the Protection of the Marine Environment Relating to Tank Vessels Carrying Oil in Bulk, OPA 90
 - e. International Convention for the Prevention of Pollution from Ships, 1973, and its Protocol of 1978 (MARPOL 73/78)
 - f. 33 CFR 151
 - g. 33 CFR 155
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Disclaimer

These guidelines were developed by the Marine Safety Center staff as an aid in the preparation and review of vessel plans and submissions. They were developed to supplement existing guidance. They are not intended to substitute or replace laws, regulations, or other official Coast Guard policy documents. The responsibility to demonstrate compliance with all applicable laws and regulations still rests with the plan submitter. The Coast Guard and the U. S. Department of Transportation expressly disclaim liability resulting from the use of this document.

Contact Information

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General Review Guidance

- ☐ If the vessel is new and not a sister vessel, has the Application for Inspection been submitted? In general, no plan review will occur until receipt of a copy of the Application.
 - ☐ Is it clearly stated what is desired from the MSC? Are all plans requiring Coast Guard review and/or approval submitted in triplicate? Are there any special or unusual requests involved?
 - ☐ Are all spaces identified and designated on the plan?
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- ❑ Determine the applicable regulations (use 46 CFR 151.01-10 for specific guidance):
 - ❑ For **manned and unmanned** barges that carry cargo listed **only** in 46 CFR Table 30.25-1, then Subchapter D applies. (151.01-10(d))
 - ❑ For **unmanned** barges only, if cargo is listed in 46 CFR Table 151.05 and **has** flammability or combustibility characteristics as indicated by a fire protection requirement in the table, then Subchapters O and D apply. (151.01-10(b))
 - ❑ For **unmanned** barges only, if cargo is listed in 46 CFR Table 151.05 and **does not have** flammability or combustibility characteristics as indicated by a fire protection requirement in the table, then Subchapters O and D or O and I apply. The option for applying D or I, in addition to O, is left up to the barge owner. The owner must request I/D certification on the Application for Inspection, otherwise the barge will be regulated under O/D. (151.01-10(c))
 - ❑ For **manned** barges which carry a cargo listed in Table 151.05, Commandant will consider the case individually and determine what subchapters apply. (151.01-10(e))

For a vessel subject to Subchapter D or Subchapters O and D:

- ❑ Double Bottom
 - ❑ For an inland barge, a double bottom shall be fitted in accordance with 33 CFR 157.10d(d)(2) [2 foot requirement].
 - ❑ For an oceangoing barge, a double bottom shall be fitted in accordance with 33 CFR 157.10d(c)(2).
- ❑ Double Side
 - ❑ For a subchapter D and Type III O/D **inland** barge, a double side shall be fitted in accordance with 33 CFR 157.10d(d)(1) [2 foot requirement].
 - ❑ For a subchapter D and Type III O/D **ocean** barge, a double side shall be fitted in accordance with 33 CFR 157.10d.
 - ❑ For a subchapter O/D barge, a double side shall be fitted as follows:
 - ❑ Type I hull; 4 feet from the side shell and box end
25 feet from the headlog at the bow, for lead barge
 - ❑ Type II hull; 3 feet from the side shell and box end

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25 feet from the headlog at the bow, for lead barge

- ❑ Size and arrangements of cargo tanks (**ocean going barges only**)
 - ❑ Ensure that the size and arrangement of cargo tanks are in compliance. For a barge operated only on domestic voyages, use the criteria in 33 CFR 157.19, Appendix A.4-5. For a barge operated on domestic and on an international voyage, use the criteria in MARPOL 73/78, Regulation 24 (Note: domestic and international criteria are identical).
- ❑ Prohibited Spaces
 - ❑ Ensure compliance with 33 CFR 155.470.
- ❑ Means of Escape (**manned barges only**)
 - ❑ Two means of escape must be provided from accommodations, spaces normally manned, and machinery spaces, as required by 46 CFR 32.02-1.
- ❑ Location of Spaces
 - ❑ The galleys, living quarters, navigation spaces, general cargo spaces, boiler rooms, and enclosed spaces where sources of vapor ignition are normally present shall be segregated from cargo tanks by cofferdams, pump rooms, or tanks. (46 CFR 32.60-10)
- ❑ For **manned** barges only, sleeping accommodations
 - ❑ No sleeping space may berth more than 4 persons. (46 CFR 32.40-20(b)).
 - ❑ Each licensed officer shall be provided with a separate stateroom, where practicable. (46 CFR 32.40-20(a)).
 - ❑ Sizing, spacing and lockers must be provided. (46 CFR 32.40-20(c)-(e)).
- ❑ For **manned** barges only , wash spaces; toilet spaces; and shower spaces
 - ❑ Each unit must have at least 1 toilet, 1 washbasin, and 1 shower or bathtub for every 8 persons who occupy sleeping spaces that do not have private or semi-private facilities attached. All facilities shall be constructed in accordance with 46 CFR 32.40-25.
- ❑ For **manned** barges only, messrooms
 - ❑ Messrooms shall be constructed in accordance with 46 CFR 32.40-30.
- ❑ For **manned** barges only, hospital spaces

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- ☐ Each unit carrying twelve or more persons on a voyage of more than 3 days requires a hospital space or a designated treatment or isolation room, in accordance with 46 CFR 32.40-35.
- ☐ For **manned** barges only, other spaces
 - ☐ Laundry, recreation, and open deck spaces shall be provided in accordance with 46 CFR 32.40-40.
- ☐ Guardrails and Bulwarks
 - ☐ Guardrails or bulwarks shall be constructed in accordance with 46 CFR 32.01-10.
- ☐ Ensure that all spaces are divided into tight compartments. (46 CFR 32.60-5 and 33 CFR 155.815)
- ☐ Ensure that tank spaces are extended to the main deck with hatches and vents extended to the weather deck. (46 CFR 32.60-10)
- ☐ Ensure that the pump room is isolated from source of vapor. (46 CFR 32.60-20)
- ☐ Containment of deck spills
 - ☐ Deck coamings and enclosed areas shall be constructed in accordance with 33 CFR 155.310.
- ☐ Slop tanks, verify slop tanks as required per 33 CFR 157.15.

For a vessel regulated under Subchapter O and I:

- ☐ Double Bottom (46 CFR 151.15-3(d))
 - ☐ For an ocean and inland barge, the double bottom height will be controlled by the ability of the submitter to show that the vessel can survive the damage stability requirements, as applicable. 46 CFR 151.15-3(d)(2) requires an inspection clearance of at least 15 inches. (Note: Most designers provide a double bottom height of at least 15 inches (the specified double bottom extent of damage on a Type I and II hull) to avoid having to damage the cargo tank.
- ☐ Double Side (46 CFR 151.15-3(d))
 - ☐ For a subchapter O/I barge, a double side shall be fitted as follows:
 - ☐ Type I hull; 4 feet from the side shell and box end
25 feet from the headlog at the bow, for lead barge

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- ❑ Type II hull; 3 feet from the side shell and box end
25 feet from the headlog at the bow, for lead barge
 - ❑ Type III hull; No double side requirement
- ❑ Means of Escape (**manned barges only**)
 - ❑ Two means of escape must be provided from accommodations, spaces normally manned, and machinery spaces, as required by 46 CFR 92.10-5.
- ❑ For **manned** barges only, sleeping accommodations
 - ❑ No sleeping space may berth more than 4 persons. (46 CFR 92.20-20(b))
 - ❑ Each licensed officer shall be provided with a separate stateroom, where practicable. (46 CFR 92.20-20(a))
 - ❑ Sizing, spacing and lockers must be provided. (46 CFR 92.20-20(c)-(e))
- ❑ For **manned** barges only , wash spaces; toilet spaces; and shower spaces
 - ❑ Each unit must have at least 1 toilet, 1 washbasin, and 1 shower or bathtub for every 8 persons who occupy sleeping spaces that do not have private or semi-private facilities attached. All facilities shall be constructed in accordance with 46 CFR 92.20-25.
- ❑ For **manned** barges only, messrooms
 - ❑ Messrooms shall be constructed in accordance with 46 CFR 92.20-30.
- ❑ For **manned** barges only, hospital spaces
 - ❑ Each unit carrying twelve or more persons on a voyage of more than 3 days requires a hospital space or a designated treatment or isolation room, in accordance with 46 CFR 92.20-35.
- ❑ For **manned** barges only , other spaces
 - ❑ Laundry, recreation, and open deck spaces shall be provided in accordance with 46 CFR 92.20-40.

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- Guardrails and Bulwarks
 - Guardrails or bulwarks shall be constructed in accordance with 46 CFR 92.25.
- Containment of deck spills
 - Deck coamings and enclosed areas shall be constructed in accordance with 33 CFR 155.310.

For a vessel regulated under Subchapter O:

- For open hopper barges, verify the coaming height requirements:
 - A 36 inch, (may be graduated to 24 inch at midlength and 18 inch thereafter) min. height plowshare breakwater on the forward rake, unless demonstrating to the Commandant that sufficient protection without the plowshare. (46 CFR 151.10-20 (2))
 - An open hopper carrying chlorine must have 36" min. height coaming around the hopper. (46 CFR 151.10-20 (3))
- Ensure that each tank has an access openings at least 15 in. x 18 in. 46 CFR 151.15-3(d)(3); 153.217; .219; .254, .256, & .354

Definitions

Routes: Inland routes include vessel service on lakes, bays, sounds, rivers, and coastwise routes, including "special service voyages" and "limited coastwise, fair weather only." Operation on the Great Lakes is not considered an inland route, unless specified in fair weather definition. Definitions for these terms can be found in the following sources:

Rivers:	46 CFR 30.10-61
Lakes, Bays, and Sounds:	46 CFR 30.10-41
Great Lakes:	46 CFR 30.10-33
Ocean:	46 CFR 30.10-45
Coastwise:	46 CFR 30.10-11
Special service voyages:	MSM, Volume IV, Chapter 6, Part F.3.g
Fair weather voyages:	MSM, Volume IV, Chapter 6, Part F.3.i

International Voyage: A voyage from a country to which the present Convention applies to a port outside such country, or conversely. (See SOLAS Chapter I, Part A, Regulation 2(d).)